



Normal Checklists Chapter NC

PREFLIGHT

Oxygen Test, **100%**
 Flight instruments Heading ^{degrees} ____, Altimeter ^{altitude} ____
 Parking brake Set
 Fuel control switches **CUTOFF**

RVSM CHECK

FLT PLAN "W" Re-confirm
 TCAS Normal
 Auto Pilot ALT holding Normal *
 Alt indication error Check, verify its accuracy
 ALT warning Check *

BEFORE START

Passenger signs
MCP **V2** ____, **HDG** ____, **ALT** ____ ^{in METERS}
 Takeoff speeds **V1** ____, **VR** ____, **V2** ____
 CDU preflight Completed
 Trim ^{in PM} ____ Units, **0**, **0**
 Taxi and takeoff briefing Completed
 Beacon **BOTH**

BEFORE TAXI

Anti-ice
 Recall Checked
 Autobrake **RTO**
 Flight control Checked ^{AOM}
 Ground equipment Clear

BEFORE TAKE OFF

Flaps

AFTER TAKEOFF

Landing Gear UP and OFF
 Flaps **UP**

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Normal Checklists Chapter NC

DECENT

Recall..... Checked
 Autobrake
 Landing date..... **VREF**__, Minimums__
 Approach briefing Completed

Befor enter RVSM space

Master Alt Indication error no more than ±200feet (60 meters)
Normal
 Alt Holding error no more than ±150feet (45meters)
Normal
 Alt Warning error no more than ±200feet (60 meters)
Normal
 TCASNormal
 Auto PilotNormal

APPROACH

Altimeters.....

LANDING

SpeedbrakeArmed
 Landing gear..... **DOWN**
 Flaps.....

SHUTDOWN

Hydraulic panel..... Set
 Fuel pumps.....Off
 Flaps..... **UP**
 Parking brake.....
 Fuel control switches..... **CUTOFF**
 Weather radar.....Off

SECURE

IRS..... **OFF**
 Emergency exit lights **OFF**

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Depressurization2.1**

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**CABIN ALTITUDE or Rapid
Depressurization**

Condition: A cabin altitude exceedance occurs.

- 1 Don the oxygen masks.
- 2 Establish crew communications.
- 3 Check the cabin altitude and rate. Verify packs are on and outflow valves are closed.
- 4 **If** the cabin altitude is uncontrollable:
SUPRNMRY OXY switchON
Without delay, descend to the lowest safe altitude or 14,000 feet, whichever is higher.

To descend:

Move the thrust levers to idle.

Extend the speedbrakes.

If structural integrity is in doubt, limit airspeed and high maneuvering loads.

Descend at VMO/MMO.

-
- 5 **If** OUTFLOW VLV L, OUTFLOW VLV R, and CABIN ALT AUTO messages are shown:

Do **not** accomplish the follow checklists:

CABIN ALT AUTO
OUTFLOW VLV L, R



BLD DUCT LEAK L, C, R

Condition: A bleed air leak occurs in the left, center, or right duct.

Objective: To isolate the bleed duct leak.

1 Choose one:

◆ **BLD DUCT LEAK C** message is shown:

▶▶ Go to step 2

◆ **BLD DUCT LEAK L or R** message is shown:

▶▶ Go to step 12

- 2 ISLN valve switches (both)Off
- 3 PACK 2 control selector..... OFF
- 4 APU selector OFF
- 5 AFT CARGO HT switch.....Off
- 6 TRIM AIR switchOff
- 7 FLT DECK TEMP selector Set
- 8 Cargo smoke detection is no longer available.
- 9 **Convert Freighter:**
Cargo smoke detection is available.
- 10 Do not use ground pneumatic air.
- 11 Do **not** accomplish the follow checklists:
CARGO DET AIR
TEMP ZONE
TRIM AIR OFF



▼ Continued on next page ▼

▼ BLD DUCT LEAK L, C, R continued ▼

- 12 ISLN valve switch (affected side)..... Off
- 13 ISLN valve switch (unaffected side)..... On
- 14 ENGINE BLEED air switches (affected side).....OFF
This isolates the air source and maintains pressure on the unaffected side.
- 15 PACK control selector (affected side)OFF
- 16 Hydraulic DEMAND PUMP 1 or 4 selector (affected side)OFF
- 17 WING ANTI-ICE switch Off
Do not use wing anti-ice.
- 18 Choose one:
 - ◆ **At or above 10,000 feet:**
Sufficient bleed air may not be available for nacelle anti-ice if N1 is less than 70%.
▶▶ **Go to step 19**
 - ◆ **Less than 10,000 feet:**
Sufficient bleed air may not be available for nacelle anti-ice if N1 is less than 55%.
▶▶ **Go to step 19**
- 19 Do **not** accomplish the following checklists:
BLEED OFF
HYD PRESS DEM 1 OR 4(affected side)
- 20 **Checklist Complete Except Deferred Items**

▼ Continued on next page ▼

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Deferred Items

At top of descent:

PACK control selectors Set a maximum
 of one pack on
 This maintains bleed air extraction within limits.

Descent checklist

Recall Checked
 Autobrake
 Landing data VREF ____, Minimums ____
 Approach briefing Completed

Flap Extension

LE flaps move in secondary mode. During approach,
 allow additional time for flap extension.

Do **not** accomplish the following checklist:

FLAPS PRIMARY

Note: A temporary LE flap asymmetry, accompanied
 by a mild rolling moment, results when LE flaps
 are extended or retracted.

Approach Checklist

Altimeters

**Caution! Do not deploy the thrust reversers until
 the nose gear contacts the runway.**

▼ Continued on next page ▼

Landing Checklist

Speedbrake.....Armed
Landing gearDOWN
Flaps _____

After landing

Note: If the BLD DUCT LEAK L message is shown, do not shut down engine 1 when towed into a gate. Shutdown engine 1 depressurizes hydraulic system 1 and body gear steering is inoperative. Tight turns may cause tire scrubbing.



Additional Information

When the thrust reversers are deployed, the inboard and midspan LE flaps retract, resulting in a LE flap asymmetry. If the thrust reversers are deployed before the nose gear contacts the runway, immediate and significant control wheel input, approximately 25 to 65 degrees, may be needed to counter the LE flap asymmetry.

BLD 1, 2, 3, 4 OVHT/PRV

Condition: One or more of these occur:

- An engine bleed air overheat.
- An PRV is failed closed.

Nacelle anti-ice is not available for affected engine.



SYS
FAULT

BLEED 1, 2, 3, 4

Condition: One of these occurs:

- An engine bleed overpressure.
- A high pressure bleed valve failed open.
- An PRV failed open.

Objective: To turn the engine bleed air switch OFF and then determine whether nacelle anti-ice is available.

1 ENGINE BLEED air switch (affected engine)OFF

2 NACELLE ANTI-ICE switch (affected engine) ON

3 Choose one:

◆ NAI VALVE message for the affected engine is shown:

Nacelle anti-ice for the affected engine is not available.

ANTI—ICE message may be shown.

NACELLE ANTI-ICE switch

(affected engine) Off

▶▶ Go to step 6

◆ NAI VALVE message for the affected engine is **not** shown:

▶▶ Go to step 4

4 Use the nacelle anti-ice normally.

▼ Continued on next page ▼

▼ BLEED 1, 2, 3, 4 continued ▼

5 Choose one:

- ◆ **At or above 10,000 feet:**
Sufficient bleed air may not be available for nacelle anti-ice if N1 is less than 70%.
▶▶ **Go to step 6**
- ◆ **Less than 10,000 feet:**
Sufficient bleed air may not be available for nacelle anti-ice if N1 is less than 55%.
▶▶ **Go to step 6**

6 Do **not** accomplish the following checklist:

BLEED OFF

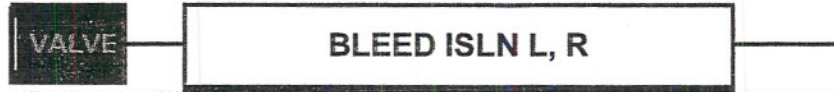


BLEED HP ENG 1, 2, 3, 4

Condition: The high pressure bleed valve is failed closed.

1 Choose one:

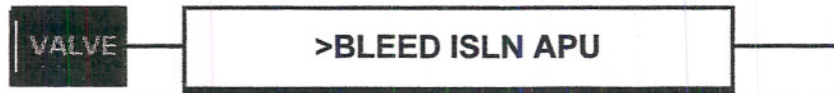
- ◆ **At or above 10,000 feet:**
Sufficient bleed air may not be available for nacelle anti-ice if N1 is less than 70%.
■ ■ ■ ■ ■
- ◆ **Less than 10,000 feet:**
Sufficient bleed air may not be available for nacelle anti-ice if N1 is less than 55%.
■ ■ ■ ■ ■



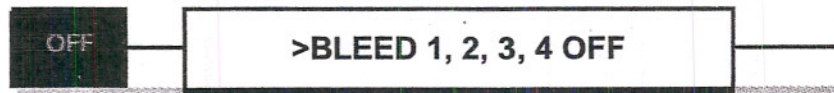
Condition: The isolation valve is not in the commanded position.

1 If attempting duct isolation and the isolation valve will not close:

- ISLN valve switch (unaffected side)Off
- PACK 2 control selector OFF



Condition: The APU bleed isolation valve is not in the commanded position.



Condition: All of these occurs:

- Engine bleed air switch is OFF.
- Engine is running.
- Engine bleed air valve is closed.



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CABIN ALT AUTO

Condition: One of these occurs:

- The automatic pressurization control is failed.
- Both outflow valve manual switches are on.

Objective: To manually control the cabin altitude.

1 OUTFLOW VALVE MAN switch (both)ON

2 PACK control selector One pack OFF

This reduces the incoming volume of air to ease manual operation.

▼ Continued on next page ▼

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3 Choose one:

◆ Outflow valves **operate manually**:

OUTFLOW VALVES

manual controlOPEN or CLOSE
 as needed to maintain the
 correct cabin altitude and rate

Note: The recommended cabin rate is
 approximately 500 FPM for climbs and
 descents.

Note: Recommended cabin altitude in cruise is:

FLIGHT LEVEL	CABIN ALTITUDE
Up to 230	Landing Field Elevation
Up to 260	2000
Up to 300	4000
Up to 350	6000
Above 350	8000

▶▶ Go to step 8

◆ Outflow valves **do not** operate manually:

▶▶ Go to step 4

- 4 Pressurization control is lost. Check cabin altitude, cabin rate and cabin differential pressure regularly.
- 5 Cabin altitude can only be maintained with packs and airplane altitude. Do not climb to higher altitudes.
- 6 Recalculate fuel requirements for destination.

▼ Continued on next page ▼

▼ CABIN ALT AUTO continued ▼

7 If cabin altitude increase to 10,000 feet or differential pressure exceeds 9 psi:

Don the oxygen masks.

Establish crew communications.

PASS OXYGEN switchON

Descent to maintain cabin altitude at or below 10,000 feet and cabin differential pressure at or below 9 psi.

8 Checklist Complete Except Deferred Items

Deferred Items

Descent checklist

Recall.....Checked

Autobrake

Landing data..... VREF___, Minimums___

Approach briefing Completed

Approach Checklist

Altimeters.....

▼ Continued on next page ▼

Choose one:

- ◆ Outflow valves **operate manually**:
 - When at pattern altitude:**
 - OUTFLOW VALVES
 - manual control Move the outflow valves to full open.
 - ▶▶ **Go to Landing Checklist**
- ◆ Outflow valves **do not operate manually**:
 - ▶▶ **Go to Passing 15,000 feet**

Passing 15,000 feet

PACK control selectors Two packs off

Passing 10,000 feet

PACK control selectors All packs off

Landing Checklist

Speedbrake Armed
 Landing gear DOWN
 Flaps _____



>E/E CLNG CARD

Condition: A fault occurs in the equipment cooling system.
The system does not fully operate.



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EQUIP COOLING

Condition: The ground exhaust valve is not in the commanded position or:

With Equipment Cooling selector in NORM or STBY, one or more of these occur:

- Airflow is insufficient.
- An overheat is sensed.
- Smoke is sensed.

With Equipment Cooling selector in OVRD, differential pressure for reverse flow cooling is not sufficient.

1 Avionics/electronic equipment and displays may become unreliable or fail.

2 Choose one:

◆ On the **ground**:
EQUIP COOLING selector STBY



◆ In **flight**:
▶▶ **Go to step 3**

3 EQUIP COOLING selector OVRD

4 Choose one:

◆ EQUIP COOLING message **stays shown or shows again**:
Plan to land at the nearest suitable airport.



◆ EQUIP COOLING message **stays blank**.



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>HUMID FLT DK

Condition: A fault occurs in the flight deck humidifier.



LANDING ALT

Condition: One of these occurs:

- The landing altitude disagrees between the cabin altitude controller and FMC.
- The landing altitude switch is pushed.

1 Choose one:

◆ **Manual** landing altitude control is selected:

▶▶ **Go to step 2**

◆ **Automatic** landing altitude control is selected:

LDG ALT switch..... MAN

▶▶ **Go to step 2**

2 LDG ALT controlManually set the landing altitude



OUTFLOW VLV L,R

Condition: One of these occurs:

- Automatic outflow valve is inoperative.
- The outflow valve manual switch is on.

Objective: To control cabin altitude manually.

1 OUTFLOW VALVES MAN

Switch(affected valve)ON

2 PACK control selector One pack OFF

3 OUTFLOW VALVES

manual control Push to CLOSE
and hold until outflow
valve indications show fully closed.



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PACK 1, 2, 3

**SYS
FAULT**

May or may not be illuminated

Condition: One or more of these occur:

- A pack controller fault.
- A pack operation fault.
- A pack overheat.
- A pack 2 shutdown and a cabin pressure relief valve is open.
- All engine bleed air is shutoff.

Objective: To attempt to switch to a functioning controller.

- 1 TRIM AIR switch ON
- 2 PACK control selector(affected pack(s)) A
- 3 PACK RST switch..... Push
- 4 Choose one:

◆ PACK message(s) **blanks.**



◆ PACK message(s) **stays shown or shows again:**

▶▶ **Go to step 5**

▼ Continued on next page ▼

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▼ PACK 1, 2, 3 continued ▼

5 PACK control selector(affected pack(s)).....B

6 PACK RST switchPush

7 Choose one:

◆ PACK message(s) **blanks.**



◆ PACK message(s) **stays shown or shows again:**

PACK control

Selector(affected pack(s)).....OFF



If three PACK message are shown, pressurization is lost:



- 1) Descend normally to suitable flight level;
- 2) Advise supernumerary to don the OXY masks;
- 3) **Caution:** Fuel consumption is increased at low altitude; Recalculate fuel requirements for destination to decide whether or not land at the nearest suitable airport according to actuality situation.

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PACK CONTROL

Condition: Automatic control of the outlet temperature of all packs is inoperative.

1 PACK RST switch Push

Note: If the PACK CONTROL message stays shown or shows again, the packs continue to work, but the air outlet temperature is not controlled.

2 Choose one:

◆ PACK CONTROL message **blanks**.



◆ PACK CONTROL message **stays shown or shows again**:

▶▶ **Go to step 3**

3 TRIM AIR switch ON

4 Packs may overheat and shut down at lower altitude during descent.

5 Choose one:

◆ TEMP ZONE message is **shown**:

The cabin temperature can not be control ed.



◆ TEMP ZONE message is **not** shown:

▶▶ **Go to step 6**

6 Pack outlet temperature cannot be reduced to decrease cabin temperature.

Note: Passenger cabin temperatures may be controlled with passenger temperature selector and cabin temperature panel.



2.20

PRESS RELIEF

Condition: One or more pressure relief valves opens with all packs on.

PACK 2 control selector OFF



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TEMP CARGO HEAT

Condition: An aft cargo compartment overheat occurs.

1 Choose one:

◆ Aft cargo heat is **not** needed:

AFT CARGO HEAT switch Off

On extended flights, the aft cargo compartment temperature may decrease to below freezing.



◆ Aft cargo heat is **needed**:

Note: If aft cargo heat stays on, the system cycles at a higher temperature and alternately shows the TEMP CARGO HEAT message.



SYS
FAULT

TEMP ZONE

Condition: One or more of these occur:

- A zone duct overheat.
- The master trim air valve fails closed.
- A zone temperature controller fails.
- Forward or aft lower lobe cargo zone trim air valve fails closed.
- Forward or aft lower lobe cargo compartment overheat.

1 ZONE RST switch Push

2 Choose one:

◆ TEMP ZONE message **blanks**.◆ TEMP ZONE message **stays shown or shows again**:

▶▶ Go to step 3

3 FLT DK TEMP selector Set

If the zone temperature controller is failed:

The flight deck zone is maintained at a moderate temperature.

4 Main deck and upper deck temperature is not controlled.

5 Lower lobe cargo temperature may be colder than selected.

6 Do **not** accomplish the following checklist:

TRIM AIR OFF



>TRIM AIR OFF

Condition: The master trim air valve is closed. The backup mode controls flight deck, upper deck, crew rest and main deck temperature.

B-2456/ 58:

Condition: The master trim air valve is closed. The backup mode controls flight deck, upper deck and main deck temperature.



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>BAT DISCH APU

Condition: An APU battery is discharging.



>BAT DISCH MAIN

Condition: A main battery is discharging.



OFF

>BATTERY OFF

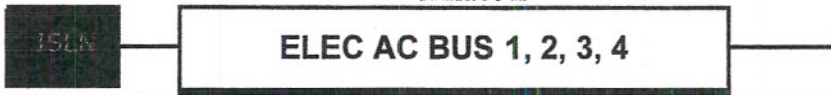
Condition: The battery switch is off.



>DRIVE DISC 1, 2, 3, 4

Condition: The generator drive is disconnected.





OFF Condition: The AC bus is not powered.

Objective: To attempt to reset the generator and then the bus tie. Also, to reset the EECs if the bus is recovered.

Attempt only one reset of the generator control switch.

1  GEN CONT switch

(affected generator) OFF, then ON

2 Choose one:

◆ ELEC AC BUS message **stays shown**:

Do not attempt to close the tie.

▶▶ **Go to step 3**

◆ ELEC AC BUS message **blanks**:

▶▶ **Go to step 6**

3 Choose one:

◆ ELEC AC BUS **2 or 3** message stays shown.



◆ ELEC AC BUS **1 or 4** message stays shown:

▶▶ **Go to step 4**

▼ Continued on next page ▼

▼ ELEC AC BUS 1, 2, 3, 4 continued ▼

4 Choose one:

◆ ELEC AC BUS 1 message is shown:

Avoid icing conditions.

Flight in icing conditions may result in unreliable Captain's and Standby flight instruments indications.

▶▶ Go to Inoperative Items.

◆ ELEC AC BUS 4 message is shown:

Avoid icing conditions.

Flight in icing conditions may result in unreliable First Officer's flight instrument indications.

▶▶ Go to Inoperative Items.

Inoperative Items

Both pilot probe heaters on one side of the airplane inop

Avoid icing condition.

Autothrottle inop

Use manual throttle.

LNAV/VNAV modes inop

Use HDG SEL or HDG HOLD.

Reference EPR is blank

Use manual throttle.

▼ Continued on next page ▼

5 Do **not** accomplish the following checklists:

- HEAT P/S CAPT, F/O
- HEAT P/S L, R AUX



6 Choose one:

◆ ELEC BUS ISLN message is **not** shown.



◆ ELEC BUS ISLN message is **shown**:

▶▶ **Go to step 7**

Attempt only one reset.

7  BUS TIE switch

(affected generator) Off, then AUTO

8 Choose one:

◆ ELEC BUS ISLN message **stays shown**.



◆ ELEC BUS ISLN message **blanks**:

▶▶ **Go to step 9**

9 Do these steps for the affected engine:

- Thrust lever Retard to mid position
- ELEC ENG CONTROL switch ALTN, then NORM



ISLN

ELEC BUS ISLN 1, 2, 3, 4

Condition: The bus tie is open.

Objective: To attempt to reset the bus tie.

Attempt only one reset of the bus tie switch.



BUS TIE switch Off, then AUTO



DRIVE

ELEC DRIVE 1, 2, 3, 4

Condition: One of these occurs:

- IDG oil pressure low.
- IDG temperature high.
- Generator control open due to uncorrectable generator frequency fault.

Objective: To prevent damage to the IDG.

Action is irreversible

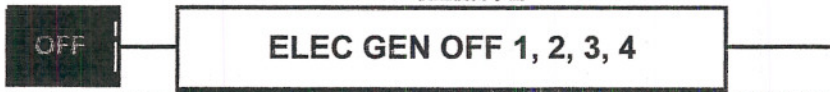
1  Generator DRIVE DISC switch

(affected generator)Confirm.....Push

2 Do **not** accomplish the following checklists:

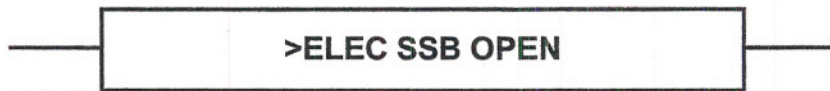
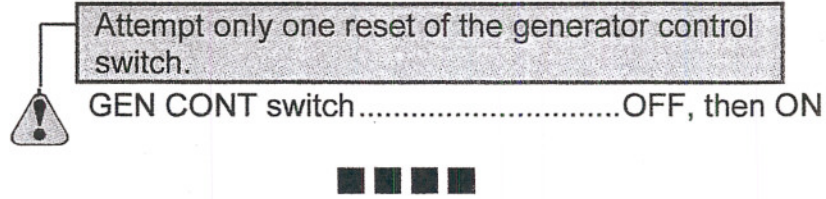
DRIVE DISC
ELEC GEN OFF





Condition: The generator control is open.

Objective: To attempt to reset the generator.

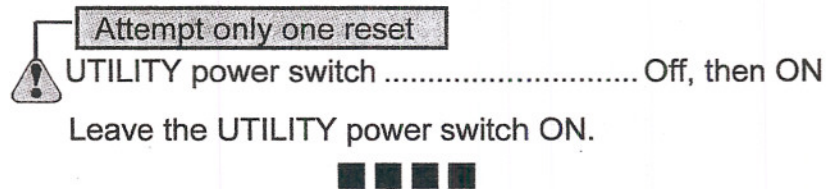


Condition: The split system breaker is failed open.



Condition: A utility bus is not powered.

Objective: To attempt to reset power.



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>STBY BUS APU

Condition: The APU standby bus is not powered.



>STBY BUS MAIN

Condition: The main standby bus is not powered.



>STBY PWR OFF

B-2409/ 56/ 58

Condition: The standby bus is not powered.



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Aborted Engine Start

Condition: During a ground start, an abort start condition occurs.

Objective: To shut down the engine and motor it.

1 FUEL CONTROL SWITCH.....CUTOFF

2 Choose one:

◆ Engine START light is **illuminated**:
Motor the engine for 30 seconds.
Engine START switch Push



◆ Engine START light is **extinguished**:
▶▶ GO TO STEP 3

3 When N2 decreases below 15%:

B-2456/ 58/ 75/ 76

AUTOSTART switch..... Off

This allows engine motoring.

Engine START switch Pull

Motor the engine for 30 seconds.

Engine START switch Push



ENG 1, 2, 3, 4 AUTO START

Aircraft have auto start system

Condition: During a ground start, any of the following condition occur:

- Autostart did not start the engine.
- The fuel control switch is in RUN at low engine RPM with the autostart switch off.

Objective: To shut down the engine and motor it.

1 FUEL CONTROL SWITCH..... CUTOFF

2 Choose one:

- ◆ Engine START light is **illuminated**:
 Motor the engine for 30 seconds.
 Engine START switchPush
 ■ ■ ■ ■
- ◆ Engine START light is **extinguished**:
 ► ► **GO TO STEP 3**

3 When N2 decreases below 15%:

AUTOSTART switch Off

This allows engine motoring.

Engine START switch Pull

Motor the engine for 30 seconds.

Engine START switch Push

■ ■ ■ ■

Intentionally
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**ENG 1, 2, 3, 4 FAIL
Or
Multiple Engine Flameout or Stall**

Condition: One of these occurs on two or more engines:

- Engine flameout.
- Engine indications are unusual.
- Engine indications are more than limits.
- Unusual engine noises are heard.
- There is no response to thrust lever movement.

Objective: To attempt a rapid relight.

1 CONT IGNITION switch..... ON

2 FUEL CONTROL switches

(affected engines) Confirm..... CUTOFF,
then RUN

3 If EGT rises rapidly approaching the EGT takeoff limit:

Repeat the above step as needed.

▼ Continued on next page ▼

▼ ENG 1, 2, 3, 4 FAIL or Multiple Engine Flameout or Stall continued ▼

4 Choose one:

- ◆ Airspeed is **less than 200 KIAS**:
PACK control selectors Set a maximum of one pack on.

Engine START switch (affected engines) Pull
▶▶ **GO TO STEP 5**
- ◆ Airspeed is **equal or more than 200 KIAS**:
▶▶ **GO TO STEP 5**

5 Engines may accelerate to idle very slowly, especially at high altitudes. Slow acceleration may be incorrectly interpreted as a hung start or an engine malfunction.

6 If N2 is steadily increasing and EGT stays within limits, the start is progressing normally.

B-2456/ 58/ 75/ 76:

7 Choose one:

- ◆ AUTOSTART switch for the affected engine is **off**:
Monitor EGT during engine start.
■ ■ ■ ■
- ◆ AUTOSTART switch for the affected engine is **ON**.
■ ■ ■ ■

B-2409/ 77/ 78:

8 AUTO IGNITION selector BOTH

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Engine Limit or Surge or Stall

Condition: One or more of these occur:

- Engine indications are unusual.
- Engine indication are rapidly approaching or exceeding limits.
- Unusual engine noises are heard.
- There is no response to thrust lever movement.

Objective: To attempt to recover normal engine operation, or shut down the engine if recovery is not possible.

1 Thrust lever (affected engine) ConfirmRetard
 until indications stay within normal limits,
 or return to normal,
 or the thrust lever is at idle

2 CON IGNITION switch..... ON
 This may prevent flameout.

▼ Continued on next page ▼

▼ Engine Limit or Surge or Stall continued ▼

3 Choose one:

◆ **EGT is stabilized or decreasing** and the other engine indications are **normal**:
▶▶ GO TO STEP 4

◆ **EGT continues to increase** toward the limit or the abnormal **condition continues**:

FUEL CONTROL switch

(affected engine) Confirm CUTOFF

Transponder mode selector TA / TA ONLY

Do not accomplish the following checklist:

ENG SHUTDOWN



4 Thrust lever (affected engine) Advance slowly and check that RPM and EGT follow thrust lever movement and all indications stay within limits

5 Run the engine normally or at a reduced thrust level which is surge and stall free.



APU DOOR

Condition: The APU door is not in the commanded position.

Objective: To ensure accurate fuel burn calculations in flight, or attempt an APU restart on the ground.

1 Choose one:

◆ In flight:

If the APU selector is OFF:

Apply the APU door open fuel burn penalty of 2%.

◆ On the ground:

▶▶ GO TO STEP 2

2 Choose one:

◆ APU selector is OFF.



◆ APU selector is ON.

▶▶ GO TO STEP 3

3 APU selectorOFF, then ON

4 Choose one:

◆ APU DOOR message blanks:

A restart may be attempted.



◆ APU DOOR message stays shown:

Do not attempt a restart.



APU FUEL

Condition: One or more of these occur:

- Low pump pressure is detected when the pump is activated.
- APU fuel valve is not in the commanded position.

1 APU selectorOFF

2 Do not start the APU.



>AUTOSTART OFF

B-2456/ 58/ 75/ 76

Condition: The engine autostart switch is off.



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>EEC 1, 2, 3, 4 TEST PWR

B-2409, B-2477, B-2478

Condition: EEC maintenance power switch in TEST.



>ENG 1, 2, 3, 4 CONTROL

Condition: An EEC system fault occurs.



ALTN

ENG 1, 2, 3, 4 EEC MODE

Condition: An EEC operates in the alternate control mode.

Objective: To place all the EECs in alternate.

1 Do these steps on all operating engines, one engine at a time:

Thrust lever Retard to mid position

ELEC ENG CONTROL switch ALTN

2 Maximum thrust limiting is not available.

3 Autothrottle is not available.



ENG 1, 2, 3, 4 FAIL — Single

B-2456/ 58/ 75/ 76

Condition: One of these occurs:

- An engine failure.
- An engine flameout.

1 If more than one ENG FAIL message is shown:

- ▶▶ **Go to the ENG 1, 2, 3, 4 Fail or Multiple Engine Flameout or Stall checklist on page 7.4**

2 Thrust lever Confirm..... Idle

3 FUEL CONTROL switch..... Confirm..... CUTOFF

4 Transponder mode selector TA / TA ONLY

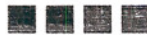
 5 Do **not** accomplish the following checklist:

ENG SHUTDOWN

6.A restart may be attempted if there is N1 rotation and no abnormal airframe vibration.

7 Choose one:

◆ Restart is not needed:



◆ Restart is needed:

- ▶▶ **Go to step 8**

8. Monitor EGT during start.

▼ Continued on next page ▼

9. Engines may accelerate to idle very slowly, especially at high altitudes. Slow acceleration may be incorrectly interpreted as a hung start or an engine malfunction.

10. If N2 is steadily increasing, and EGT stays within limits, the start is progressing normally.

11. Choose one:

◆ AUTOSTART switch is **ON**:

▶▶ Go to step 12



◆ AUTOSTART switch is **Off**:

AUTO IGNITION

selector BOTH

▶▶ Go to step 13

12. Choose one:

◆ X-BLD is **not** shown:

FUEL CONTROL switch RUN

▶▶ Go to step 14

◆ X-BLD is **shown**:

Engine START switch Pull

FUEL CONTROL switch RUN

▶▶ Go to step 15

13. Choose one:

- ◆ X-BLD is
- not**
- shown:

CONT IGNITION switch ON

FUEL CONTROL switch RUN

▶▶ Go to step 14

- ◆ X-BLD is
- shown**
- :

Engine START switch Pull

When N2 exceeds the fuel-on indicator:

FUEL CONTROL switch RUN

▶▶ Go to step 15

14. Choose one:

- ◆ EGT
- does not**
- increase within 30 seconds or an abort start condition as listed in normal procedures
- occurs**
- :

FUEL CONTROL

Switch..... Confirm..... CUTOFF



- ◆ Start is
- normal**
- :

Transponder mode selector TA/RA



15. Choose one:

◆ EGT **does not** increase within 30 seconds or an abort start condition as listed in normal procedures **occurs**:

FUEL CONTROL

Switch..... Confirm.....CUTOFF

Engine START switch.....Push



◆ Start is **normal**:

Transponder mode selectorTA/RA



ENG 1, 2, 3, 4 FAIL— Single

B-2409/ 77/ 78

Condition: One of these occurs:

- An engine failure.
- An engine flameout.

1 If more than one ENG FAIL message is shown:

- ▶▶ **Go to the ENG 1, 2, 3, 4 Fail or Multiple Engine Flameout or Stall checklist on page 7.4**

2 Thrust lever Confirm..... Idle

3 FUEL CONTROL switch..... Confirm..... CUTOFF

4 Transponder mode selector TA/TA ONLY

5 Do **not** accomplish the following checklist:**ENGINE SHUTDOWN**

6.A restart may be attempted if there is N1 rotation and no abnormal airframe vibration.

7 Choose one:

◆ Restart **is not** needed:◆ Restart **is** needed:

- ▶▶ **Go to step 8**

8. Monitor EGT during start.

▼ Continued on next page ▼

▼ ENG 1, 2, 3, 4 FAIL continued ▼

9. Engines may accelerate to idle very slowly, especially at high altitudes. Slow acceleration may be incorrectly interpreted as a hung start or an engine malfunction.

10. If N2 is steadily increasing, and EGT stays within limits, the start is progressing normally.

11. AUTO IGNITION selector BOTH

12. Choose one:

◆ X-BLD is **not** shown:

CONT IGNITION switch ON

FUEL CONTROL switch RUN

▶▶ Go to step 13

◆ X-BLD is **shown**:

Engine START switch Pull

FUEL CONTROL switch RUN

▶▶ Go to step 14

▼ Continued on next page ▼

13. Choose one:

- ◆ EGT **does not** increase within 30 seconds **or** an abort start condition as listed in normal procedures **occurs**:

FUEL CONTROL

Switch..... Confirm.....CUTOFF



- ◆ Start is **normal**:

Transponder mode selectorTA/RA

14. Choose one:

- ◆ EGT **does not** increase within 30 seconds **or** an abort start condition as listed in normal procedures **occurs**:

FUEL CONTROL

Switch..... Confirm.....CUTOFF

Engine START switch.....Push



- ◆ Start is **normal**:

Transponder mode selectorTA/RA



ENG 1, 2, 3, 4 FUEL FILT

Condition: Fuel contamination can cause fuel to bypass the fuel filter.

Erratic engine operation and flameout may occur due to fuel contamination.



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ENG 1, 2, 3, 4 FUEL VLV

Condition: One or more of these occur:
•The engine fuel valve is not in the commanded position.
•The fuel spar valve is not in the commanded position.

1 Choose one:

◆ In flight.



◆ One the ground:

Do not attempt an engine start.



>ENG 1, 2, 3, 4 LIM PROT

Condition: The EEC operates in the alternate control mode and thrust is approaching maximum rating.



ENG 1, 2, 3, 4 LOW IDLE

Condition: Engine idle not in approach setting when commanded.

1 Thrust lever (affected engine)..... Advance until the ENG LOW IDLE message blanks.



ENG 1, 2, 3, 4 OIL FILT

Condition: Oil filter contamination can cause oil to bypass the primary oil filter.

Primary engine oil filter approaching bypass condition. Oil flow to the engine will be filtered through the secondary filter element.



ENG 1, 2, 3, 4 OIL PRESS

Condition: The oil pressure is low.

1 Choose one:

◆ Oil pressure is **above** the red line limit.



◆ Oil pressure is **at or below** the red line limit:

▶▶ **Go to step 2**

2 Thrust lever

(affected engine).....Confirm..... Idle |

3 FUEL CONTROL switch

(affected engine).....Confirm..... CUTOFF |

4 Transponder mode selector TA ONLY |

5 Do **not** accomplish the following checklist:

ENG SHUTDOWN |



ENG 1, 2, 3, 4 OIL TEMP

Condition: The oil temperature is high.

1 Thrust lever
 (affected engine)..... ConfirmRetard
 slowly until temperature decreases.

2 Choose one:

◆ **ENG OIL TEMP message blanks:**

Run the engine at a thrust level to keep the
 ENG OIL TEMP message from showing.



◆ Oil temperature does **not decrease** below the red
 line limit or **stays in the amber band** for longer
 than 20 minutes:

▶▶ **Go to step 3**

3 Thrust lever

(affected engine) ConfirmIdle

4 FUEL CONTROL switch

(affected engine)..... ConfirmCUTOFF

5 Transponder mode selector TA ONLY

6 Do not accomplish the following checklist:

ENG SHUTDOWN



>ENG 1, 2, 3, 4 REVERSER

Condition: A fault occurs in the thrust reverser system.



>ENG 1, 2, 3, 4 RPM LIM

Condition: The N1 or N2 red line limit restricts the engine's thrust.



>ENG 1, 2, 3, 4 SHUTDOWN

Condition: The engine was shut down by the fuel control switch or the engine fire switch.



ENG 1, 2, 3, 4 START VLV

Condition: The start valve is not in commanded position.

- 1 In-flight or ground start using bleed air source may be unsuccessful.
- 2 If in flight:
Increase airspeed until X-BLD is no longer shown.



>ENG CONTROLS

Condition: Three or four EEC systems operate in a degraded mode. The systems do not have full redundancy.



7.24

ENG IGNITION

Condition: The continuous ignition system is failed.

STBY IGNITION selector..... 1 or 2



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ENGINE IN-FLIGHT START

B-2456/ 58/ 75/ 76

Condition: An engine start is needed after a shutdown with no fire or apparent damage.

- N1 rotation
- No fire
- No abnormal airframe vibration

- 1 Monitor EGT during start.
- 2 Engines may accelerate to idle very slowly, especially at high altitudes. Slow acceleration may be incorrectly interpreted as a hung start or an engine malfunction.
- 3 If N2 is steadily increasing and EGT stays within limits, the start is progressing normally.
- 4 Choose one:
 - ◆ AUTOSTART switch is **ON**:
 - ▶▶ **Go to step 5**
 - ◆ AUTOSTART switch is **Off**:
 - AUTO INGNITION selector BOTH
 - ▶▶ **Go to step 6**

▼ Continued on next page ▼

5 Choose one:

◆ X-BLD is **not** shown:
 FUEL CONTROL switch.....RUN
 ►► **Go to step 7**

◆ X-BLD is **shown**:
 Engine START switch Pull
 FUEL CONTROL switch.....RUN
 ►► **Go to step 8**

6 Choose one:

◆ X-BLD is **not** shown:
 CONT IGNITION switch ON
 FUEL CONTROL switch.....RUN
 ►► **Go to step 7**

◆ X-BLD is **shown**:
 Engine START switch Pull
When N2 exceeds the fuel-on indicator:
 FUEL CONTROL switch.....RUN
 ►► **Go to step 8**

▼ Engine In-flight Start continued ▼

7 Choose one:

- ◆ EGT **does not** increase within 30 seconds **or** an abort start condition as listed in normal procedures **occurs:**
 - FUEL CONTROL
switch Confirm..... CUTOFF

■ ■ ■ ■
- ◆ Start is **normal:**
 - Transponder mode selector TA/RA

8 Choose one:

- ◆ EGT **does not** increase within 30 seconds **or** an abort start condition as listed in normal procedures **occurs:**
 - FUEL CONTROL
switch Confirm..... CUTOFF
 - Engine START SWITCH PUSH

■ ■ ■ ■
- ◆ Start is **normal:**
 - Transponder mode selector TA/RA

■ ■ ■ ■

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ENGINE IN-FLIGHT START

B-2409, B-2477, B-2478

Condition: An engine start is needed after a shutdown with no fire or apparent damage.

Note: The EGT limit of in-flight start is 650°C

- 1 Monitor EGT during start.
- 2 Engines may accelerate to idle very slowly, especially at high altitudes. Slow acceleration may be incorrectly interpreted as a hung start or an engine malfunction.
- 3 If N2 is steadily increasing and EGT stays within limits, the start is progressing normally.
- 4 AUTO IGNITION selector BOTH
- 5 Choose one:
 - ◆ X-BLD is not shown:
 - CONT IGNITION switch ON
 - FUEL CONTROL switch RUN
 - ▶▶ **Go to step 6**
 - ◆ X-BLD is shown:
 - Engine START switch PULL
 - FUEL CONTROL switch RUN
 - ▶▶ **Go to step 7**

▼ Continued on next page ▼

Engine In-flight Start continued

6 Choose one:

- ◆ EGT **does not** increase within 30 seconds or an abort start condition as listed in normal procedures occurs:
FUEL CONTROL switch .Confirm..... CUTOFF
■ ■ ■ ■
- ◆ Start is **normal**:
Transponder mode selector..... TA/RA

7 Choose one:

- ◆ EGT **does not** increase within 30 seconds or an abort start condition as listed in normal procedures occurs:
FUEL CONTROL switch .Confirm..... CUTOFF
Engine START switchPUSH
■ ■ ■ ■
- ◆ Start is **normal**:
Transponder mode selector..... TA/RA
■ ■ ■ ■

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>IDLE DISAGREE

Condition: One or more engines are at approach idle and one or more engines are at minimum idle.



REVERSER UNLOCKED

Condition: The reverse annunciation shows with intentional reverse thrust not selected.

1 Choose one:

◆ With **no** yaw, loss of airspeed, or buffet:
Run the engine normally.



◆ With yaw, loss of airspeed, or buffet:
▶▶ **Go to step 2**

2 FUEL CONTROL switch
(affected engine) Confirm CUTOFF

3 Do **not** accomplish the following checklist:
ENG SHUTDOWN

4 Transponder mode selector TA / TA ONLY

5 Buffet may reduced by decreasing airspeed.

▼ Continued on next page ▼

▼ REVERSER UNLOCKED continued ▼

6 Plan to use flaps 25 and VREF 30+20 for landing.

7 Checklist Complete Except Deferred Items

Deferred Items

Descent Checklist

Recall.....Checked

Autobrake ___

Landing data..... **VREF 30+20, Minimums** ___

Approach briefing COMPLETED

Approach Checklist

Altimeters..... ___

Landing checklist

Speedbrake Armed

Landing gear DOWN

Flaps..... **25**



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STARTER CUTOUT 1, 2, 3, 4

Condition: Start valve fails to close.

1 Engine START switch(affected engine)..... Push

2 Choose one:

◆ STARTER CUTOUT message **blanks**.◆ STARTER CUTOUT message **stays shown**:▶▶ **Go to step 3**

3 ENGINE BLEED air switch(affected engine)..... OFF

4 Nacelle anti-ice for the affected engine is not available.



Two Engines Inoperative

Condition: A two engine landing is needed.

- 1 The autothrottle is inoperative.
- 2 **Checklist Complete Except Deferred Items**

Deferred Items

Landing commit point is gear extension.

Warning Go-Around after passing the landing commit point is not recommended.
Performance is not assured.

Use Flaps 25 and VREF 25 for landing.

PACK control selectors Two packs OFF

Descent Checklist

Recall.....Checked
Autobrake
Landing data..... **VREF 25, Minimums** ____
Approach briefing COMPLETED

Approach Checklist

Altimeters.....

▼ Continued on next page ▼

Go-around procedure review

If a go-around is absolutely required:

Do not use TO/GA.

Set Flaps 20, at the same time increase thrust as airspeed increases while maintaining directional control.

Retract the landing gear without delay.

Retract flaps to flaps 1 on schedule. Descent may be required.

Climb at VREF30 + 60.

Extend the landing gear and select flaps 20 at glideslope intercept, or at final descent point.

Approaching 1,000 feet AGL select flaps 25 and center rudder trim.

Landing Checklist

Speedbrake.....Armed
 Landing gear DOWN
 Flaps 25



Volcanic Ash

Condition: Volcanic ash is suspected when one or more of these occur:

- A static discharge around the windshield.
- A bright glow in the engine inlets.
- Smoke or dust on the flight deck.
- An acrid odor.


Objective: To exit the ash cloud and restart engines if needed.

**Caution! Exit volcanic ash as quickly as possible.
Consider a 180 degree turn.**

- 1 Don oxygen masks and smoke goggles, if needed.
- 2 Establish crew communications, if needed.
- 3 Autothrottle disconnect switch.....Push

This allows the thrust levers to stay where manually positioned.

If conditions allow, run the engines at idle

- 4  Thrust levers Idle

This reduces possible engine damage or flameout, or both by decreasing EGT.

- 5 CONT IGNITION switchON
- 6 PACK control selectors (all) NORM
- 7 HI FLOW switchON

▼ Continued on next page ▼

8 NACELLE ANTI-ICE switches ON

This increases bleed air extraction to improve engine stall margins.

9 WING ANT-ICE switch ON

This increases bleed air extraction to improve engine stall margins.

10 If any engine is flame out or stalled, or EGT is rapidly approaching or exceeding limit:

Engines may accelerate to idle very slowly, especially at high altitudes. Slow acceleration may be incorrectly interpreted as a hung start or an engine switch.

If N2 is steadily increasing, and EGT remains within limits, the start is progressing normally.

FUEL CONTROL switch

(affected engine) Confirm CUTOFF,
then RUN

If airspeed less than 200 KIAS:

PACK CONTROL selectors SET

Set a maximum of one pack on.

Engine START switch

(affected engine) PULL

11 AUTO IGNITION selector BOTH

▼ Volcanic Ash continued ▼

12 Volcanic ash can cause abnormal system operation such as:

Engine malfunctions, increasing EGT, unusually high EGT, compressor stall, or flameout.

Decreased or complete loss of airspeed indications.

Equipment cooling system malfunctions.

Cargo fire indications.

13 Plan to land at nearest suitable airport.



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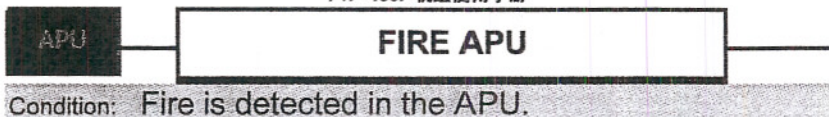
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1 APU fire switch.....Confirm.....Pull,
rotate to the stop
and hold for 1 second

2 Choose one:

◆ FIRE APU message **stays shown**:
Plan to land at the nearest suitable airport.
▶▶ **Go to step 3**

◆ FIRE APU message **blanks**:
▶▶ **Go to step 3**

3 Do **not** accomplish the following checklist:
APU



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▼ FIRE ENG 1,2,3,4 or Severe Damage Engine or Separation continued ▼

5 If High vibration occurs and continues after engine shutdown:

Without delay, reduce airspeed and descend to a safe altitude which results in an acceptable vibration level.

If high vibration returns and further airspeed reduction and descent are not practical, increasing airspeed may reduce the vibration.

▶▶ Go to step 7

6 Transponder mode selector TA / TA ONLY

7 For severe engine damage, separation, or an engine fire that does not extinguish:

Plan to land at the nearest suitable airport.

8 Do not accomplish the following checklist:

ENG SHUTDOWN



Fire Engine Tailpipe

Condition: An engine tailpipe fire occurs on the ground with no engine fire warning.

1 FUEL CONTROL switch

(affected engine) CUTOFF

2 Advise the cabin

B-2456/ 58/ 75/ 76:

3 Choose one:

◆ Bleed air is **available**:

PACK control selectors (all).....OFF

This allows maximum bleed air for engine motoring.

If the affected engine start light is extinguished:

Allow the affected N2 to decrease below 20%.

AUTOSTART switch

(affected engine) Off

Engine START switch

(affected engine) Pull

▶▶ **Go to step 5**

◆ Bleed air is **not available**:

▶▶ **Go to step 5**

▼ Continued on next page ▼

▼ Fire Engine Tailpipe continued ▼

B-2409, B-2477, B-2478

4 Choose one:

◆ Bleed air is **available**:

PACK control selectors (all).....OFF

This allows maximum bleed air for engine motoring.

If the affected engine start light is extinguished:

Allow the affected N2 to decrease below 20%.

Engine START switch
(affected engine).....Pull

▶▶ **Go to step 5**

◆ Bleed air is **not** available:

▶▶ **Go to step 5**

5 Advise the tower.

▼ Continued on next page ▼

6 Choose one:

- ◆ Engine is being motored:
 - Continue to motor until the tailpipe fire is extinguished.
 - Engine START switch (affected engine)..... Push
 - ■ ■ ■
- ◆ Engine is **not** being motored.
 - ■ ■ ■



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Smoke, Fire or Fumes

Condition: Smoke, Fire, or Fumes.

- 1 Diversion may be needed.
- 2 Don oxygen masks, if needed.
- 3 Don smoke goggles, if needed.
- 4 Establish crew communications.
- 5 Instruct the supernumeraries to turn on the upper deck reading lights.
- 6 UTILITY power switches (both)..... Off
- 7 FLT DECK FAN switch..... Off
- 8 APU selector.....OFF
- 9 Supernumerary signsON
- 10 **Anytime** the smoke or fumes becomes the greatest threat:

▶▶ **Go to the Smoke or Fumes Removal checklist on page 8.22, if needed.**

▼ Continued on next page ▼

11 Choose one:

- ◆ Source of the smoke, fire or fumes **is obvious and can** be extinguished quickly:
Isolate and extinguish the source of the smoke, fire or fumes.
If possible, remove power from the affected equipment by switch or circuit breaker in the flight deck or cabin.
▶▶ **Go to step 12**
- ◆ Source of the smoke, fire or fumes is **not obvious or can not** be extinguished quickly:
▶▶ **Go to step 13**

12 Choose one:

- ◆ Source **is** visually confirmed to be extinguished **and** smoke or fumes are **decreasing**:
Continue the flight at the Captain's discretion.
Restore unpowered items at the Captain's discretion.
▶▶ **Go to step 24**
- ◆ Source **is not** visually confirmed to be extinguished **or** smoke or fumes **continue**:
▶▶ **Go to step 13**

▼ Smoke, Fire or Fumes continued ▼

- 13 Divert to the nearest suitable airport while continuing the checklist.
- 14 Consider an immediate landing if the smoke, fire or fumes situation becomes uncontrollable.
- 15 Do not delay landing in an attempt to complete the following steps.
- 16 ISLN VALVE switches (both) Off
This isolates the left and right sides of the bleed air system.
- 17 PACK 2 control selector OFF
- 18 **Wait** 2 minutes unless the smoke or fumes are increasing. This allows time for the smoke or fumes to clear.
- 19 Choose one:
 - ◆ Smoke or fumes **continue or are increasing**:
 - PACK 3 control selector OFF
 - Wait** 2 minutes unless the smoke or fumes are increasing. This allows time for the smoke or fumes to clear.
 - ▶▶ **Go to step 20**
 - ◆ Smoke or fumes are **decreasing**:
 - ▶▶ **Go to step 24**

▼ Continued on next page ▼

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▼ Smoke, Fire or Fumes continued ▼

20 Choose one:

- ◆ Smoke or fumes **continue or are increasing**:
 - PACK 3 control selector NORM
 - PACK 1 control selector OFF
 - R ISLN switch ON
 - ▶▶ **Go to step 21**
- ◆ Smoke or fumes are decreasing:
 - L ISLN switch ON
 - ▶▶ **Go to step 21**

21 PACK 2 control selector NORM

22 **Wait** 2 minutes unless the smoke or fumes are increasing. This allows time for the smoke or fumes to clear.

23 Choose one:

- ◆ Smoke or fumes **continue or are increasing**:
 - ISLN switches (both) On
 - PACK 1 control selector NORM
 - R ISLN valve switch ON
 - Consider an immediate landing.
 - ▶▶ **Go to step 24**
- ◆ Smoke or fumes are decreasing:
 - L ISLN valve switch ON
 - ▶▶ **Go to step 24**

▼ Continued on next page ▼

▼ Smoke, Fire or Fumes continued ▼

24 Do **not** accomplish the following checklists:

- B-2409/ 75/ 76: CARGO DET AIR
- ELEC UTIL BUS L, R
- FUEL OVRD 2, 3 FWD
- FUEL PRESS CTR L
- FUEL PUMP 2, 3 FWD
- B-2409/ 75/ 76: HUMID FLT DK
- TEMP ZONE
- TRIM AIR OFF

▶▶ Go to the Smoke or Fumes Removal checklist on page 8.22



>BOTTLE LOW APU

Condition: The APU fire bottle pressure is low.



>BTL LO L ENG A, B

Condition: The left wing fire bottle A or B pressure is low.



>BTL LO R ENG A, B

Condition: The right wing fire bottle A or B pressure is low.



>CARGO DET AIR

Condition: Cargo smoke detection airflow is not sufficient.

**>CGO BTL DISCH**

Condition: One of these occurs::

- On the ground, a cargo fire bottle pressure is low.
- In flight, both cargo fire bottle A and B are discharged.

**>DET FIRE APU**

Condition: APU fire detection is inoperative.

**>DET FIRE/OHT 1, 2, 3,4**

Condition: Engine fire and overheat detection is inoperative.



AFT

FIRE CARGO AFT

Condition: Smoke is detected in the lower aft cargo compartment.

1 AFT CARGO FIRE

ARM switch.....Confirm.....ARMED

SATCOM will shutdown to prevent overheating.

System shuts down two packs and respective
PACK EICAS messages are shown.

2 PACK 3 control selectors

(affected packs).....OFF, set a
maximum of one pack on

3 CARGO FIRE DEPRESS/

DISCH switchPush and hold for one second

B-2409/ 75/ 76

210 minutes of fire suppression are available.

B-2456/ 58

334 minutes of fire suppression are available.

B-2477/ 78

195 minutes of fire suppression are available.

4 Choose one:

◆ Airplane is **at or below** 8,000 feet:

▶▶ **Go to step 7**

◆ Airplane is **above** 8,000 feet:

▶▶ **Go to step 5**

5 LDG ALT switchMAN

6 LDG ALT selector..... Set the landing altitude
between 8,000 and 8,500 feet to
command cabin altitude to 8,000 feet.

▼ Continued on next page ▼

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7 Plan to land at the nearest suitable airport.

8 Do **not** accomplish the following checklist:

LANDING ALT

9 Checklist Complete Except Deferred Items

Deferred Items

Before descent

LDG ALT switch AUTO

Descent Checklist

Recall Checked

Autobrake

Landing data VREF ___, Minimums ___

Approach briefing Completed

Approach checklist

Altimeters

Landing checklist

Speedbrake Armed

Landing gear DOWN

Flaps

Warning! Inform ground personnel not to open the cargo door until all supernumeraries and crew have exited the airplane and fire fighting equipment is nearby.



FWD

FIRE CARGO FWD

Condition: Smoke is detected in the lower forward cargo compartment.

1 FWD CARGO FIRE

ARM switch.....Confirm.....ARMED

SATCOM will shutdown to prevent overheating.

System shuts down two packs and respective
PACK EICAS messages are shown.

2 PACK control selectors

(affected packs)OFF, set a
maximum of one pack on

3 CARGO FIRE DEPRESS/

DISCH switchPush and hold for one second

B-2409/ 75/ 76

210 minutes of fire suppression are available.

B-2456/ 58

334 minutes of fire suppression are available.

B-2477/ 78

195 minutes of fire suppression are available.

4 Choose one:

◆ Airplane is **at or below** 8,000 feet:

▶▶ **Go to step 7**

◆ Airplane is **above** 8,000 feet:

▶▶ **Go to step 5**

5 LDG ALT switchMAN

6 LDG ALT selector..... Set the landing altitude
between 8,000 and 8,500 feet to
command cabin altitude to 8,000 feet.

▼ Continued on next page ▼

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7 Plan to land at the nearest suitable airport.

8 Do **not** accomplish the following checklist:

LANDING ALT

9 Checklist Complete Except Deferred Items

Deferred Items

Before descent

LDG ALT switch AUTO

Descent Checklist

Recall Checked

Autobrake

Landing data VREF ____, Minimums ____

Approach briefing Completed

Approach checklist

Altimeters

Landing checklist

Speedbrake Armed

Landing gear DOWN

Flaps

Warning ! Inform ground personnel not to open the cargo door until all supernumeraries and crew have exited the airplane and fire fighting equipment is nearby.



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MAIN
DECK

**FIRE MAIN DECK
FIRE MN DK AFT, FWD, MID**

Condition: Smoke is detected in the main deck cargo area(s).

- 1 Don oxygen masks.
- 2 Establish crew and cabin communications.
- 3 SUPRNMRY OXYGEN switch ON
- 4 MAIN Deck CARGO FIRE
ARM switch Confirm ARMED
SATCOM will shutdown to prevent overheating.
System shuts down two packs and respective
PACK EICAS messages are shown.
- 5 PACK control selector
(affected packs)..... OFF, set a
maximum of one pack on
- 6 CARGO FIRE DEPRESS/
DISCH switch Push and hold for one second
- 7 Climb or descent to 25,000 feet when conditions and
terrain allow.
- 8 Plan to land at the nearest suitable airport

▼ Continued on next page ▼

9 Do **not** accomplish the following checklists:
CABIN ALTITUDE or Rapid Depressurization
TEMP ZONE

10 Checklist Complete Except Deferred Items

Deferred Items

Before descent

LDG ALT switch.....AUTO

Descent Checklist

RecallChecked

Autobrake _____

Landing data..... VREF _____, Minimums _____

Approach briefing Completed

Approach checklist

Altimeters..... _____

Landing checklist

Speedbrake Armed

Landing gear..... DOWN

Flaps..... _____

Warning! Inform ground personnel not to open the cargo door until all supernumeraries and crew have exited the airplane and fire fighting equipment is nearby.



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FIRE WHEEL WELL

Condition: Fire is detected in a main wheel well.

- 1 **When** extending or retracting the landing gear, do not exceed the gear EXTEND limit speed (270K/.82M) .
- 2 Landing gear leverDN
This attempt to remove and extinguish the fire source.
- 3 Do not use FMC fuel predictions with gear extended.
- 4 Choose one:
 - ◆ Gear **must be retracted** for airplane performance:
 - ▶▶ Go to step 5
 - ◆ Gear **does not need to be retracted** for airplane performance:
 - ▶▶ Go to step 6
- 5 **When** the FIRE WHEEL WELL message blanks:
Wait 20 minutes. This attempts to ensure the wheel well fire is extinguished.
Landing gear leverUP, then OFF
- 6 Plan to land at the nearest suitable airport.



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OVHT ENG 1, 2, 3, 4 NAC

Condition: An overheat is detected in the engine.

1 ENGINE BLEED air switch (affected engine) OFF

2 Thrust lever

(affected engine) Confirm Retard
 Slowly until the OVHT ENG NAC message blanks

3 Choose one:

◆ OVHT ENG NAC message **stays shown**:

Thrust lever

(affected engine) Confirm Close

FUEL CONTROL switch

(affected engine) Confirm CUTOFF

▶▶ Go to step 4

◆ OVHT ENG NAC message **blanks**:

Run the engine at reduced thrust to keep the
 OVHT ENG NAV message from showing.

▶▶ Go to step 4

4 Transponder mode selector TA / TA ONLY

5 Do **not** accomplish the following checklists:

BLEED OFF

ENG SHUTDOWN



>SMOKE CREW REST

B-2409, B-2475, B-2476

Condition: Smoke detected in upper deck crew rest area.



休息室烟雾)
>SMOKE LAVATORY (>盥洗室烟雾)

>SMOKE LAVATORY

B-2456/ 58

Condition: Smoke detected in a lavatory.



Smoke or Fumes Removal

Condition: Smoke or fumes removal is needed.

Objective: To remove smoke or fumes through the smoke override valve, or the smoke evacuation port.

- 1 Do this checklist **only** when directed by the Smoke, Fire or Fumes checklist.
- 2 Do not delay landing in an attempt to complete the following steps.
- 3 EQUIP COOLING selector OVRD
This attempts to discharge the smoke or fumes overboard by using the equipment cooling override mode.

▼ Continued on next page ▼

▼ Smoke or Fumes Removal continued ▼

4 Choose one:

◆ Smoke or fumes does **not** persist and is **not** severe:

▶▶ **Go to the Smoke, Fire or Fumes checklist on page 8.7 and do the remaining steps.**



◆ Smoke or fumes **persists** or is **severe** and the smoke or fumes source is determined to be on the **flight deck**:

Pull the smoke evacuation handle. Pulling the smoke evacuation handle when smoke or fumes source is not on the flight deck may bring the smoke or fumes into the flight deck.

▶▶ **Go to the Smoke, Fire or Fumes checklist on page 8.7 and do the remaining steps.**



◆ Smoke or fumes **persists** or is **severe** and the smoke or fumes source is determined to be in the **cabin**:

▶▶ **Go to step 6**

5 LDG ALT switch MAN

▼ Continued on next page ▼

- 6 LDG ALT selector Set the landing altitude
 between 8,000 and 8,500 feet to
 command the cabin altitude to 8,000 feet
- 7 EQUIP COOLING selector NORM
- 8 Start a descent. Level off at the lowest safe altitude or
 8,500 feet, whichever is higher.
- 9 OUTFLOW VALVES MAN switches ((both)) ON
- 10 OUTFLOW VALVES manual control OPEN
- 11 Do **not** accomplish the following checklists:
- CABIN ALT AUTO
 - LANDING ALT
 - OUTFLOW VLV L, R
- 12 Return to the **Smoke, Fire or Fumes** checklist
 on page 8.7 and complete the remaining steps.

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FMC LEFT, RIGHT

Condition: An FMC is failed.

Note: If two FMC failed at the same time, select HDG SEL and ALT HLD to avoid deviate from the designed flight level in the RVSM space.

FMC LEFT, RIGHT (FMC 左、右)

1 Choose one:

◆ **A single FMC is failed:**

FMC master selector.....Select operable FMC

Reengage the autothrottle.

NAV SOURCE selector.....Select operable FMC



◆ **Both FMCs are failed:**

▶▶ **Go to step 2**

2 NAV SOURCE

Selector (Captain) CDU L or CDU C

3 NAV SOURCE

Selector (First Officer) CDU R or CDU C

4 **B-2477/ 78:**

Choose one:

◆ **Airplane position is north of 73° N latitude or south of 60° S latitude:**

HDG reference switch TRUE

▶▶ **Go to step 6**

◆ **Airplane position is not in the above regions:**

▶▶ **Go to step 6**

▼ Continued on next page ▼

5 B-2409/ 56/ 58/ 75/ 76:

Choose one:

- ◆ Airplane position **is** north of 82° N latitude (or north of 70° N between 80° W and 130° W) **or** south of 82° S latitude (or south of 60° S between 120° E and 160° E)
 HDG reference switch TRUE
 ▶▶ **Go to step 6**
- ◆ Airplane position **is not** in the above regions:
 ▶▶ **Go to step 6**

- 6 Engage heading select or heading hold mode as needed.
- 7 Route modifications must be entered into all three CDUs. Enter any new waypoints by latitude and longitude.
- 8 Manually tune navigation radios through CDUs.
- 9 LDG ALT switch MAN
- 10 LDG ALT selector Set the landing altitude
- 11 The autothrottle is inoperative.
- 12 Do **not** accomplish the following checklist:
 LANDING ALT



>FMC MESSAGE

Condition: An alert message is in the FMC scratchpad.



>FMC RUNWAY DIS

B-2409

Condition: Airplane position or heading not lined up within specified limits of active FMC departure runway and takeoff thrust applied.



>GPS

Condition: Both GPS receivers are failed.



>GPS LEFT, RIGHT

Condition: One GPS receiver is failed.



ILS ANTENNA

Condition: An ILS receiver does not use the correct antenna.

Threshold clearance may be reduced.



IRS CENTER, LEFT, RIGHT

Condition : An IRU fault occurs.

1 IRS SOURCE selector Select operable IRU

Action is not reversible

2  IRS mode

selector (affected IRU).....Confirm.....ATT

Maintain straight and level, constant airspeed flight until attitude displays recover (approximately 30 seconds).

3 Choose one:

◆ IRS message **blanks**:

Enter the current heading on the SET IRS HEADING line of the CDU position initialization page. Maintain straight and level flight while entering the heading.

The IRS heading may have to be updated periodically.



◆ IRS message **stays shown**:

▶▶ Go to step 4

Action is not reversible

4  IRS mode

selector (affected IRU).....Confirm.....OFF



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>IRS AC CENTER, LEFT, RIGHT

Condition: IRU AC power is failed.



>IRS DC CENTER, LEFT, RIGHT

Condition: IRU backup DC power is failed.



IRS MOTION

Condition: Airplane motion is detected while the IRS aligns.

- 1 Stop airplane motion until IRS alignment is complete.
- 2 Verify that the position is correct and reenter if needed.



>SNGL SOURCE ILS

Condition: Both pilots' displays use the same ILS source.



>TRANSPONDER L, R

Condition: A transponder fault occurs.



UNABLE RNP

Condition: The actual navigational performance is not sufficient.

1 Choose one:

◆ On the **ground**:

The message may show with GPS inhibited.



◆ On procedure or airway that **has an RNP alerting requirement**:

Select an alternate procedure or airway.
During an approach, go-around unless suitable visual references can be established and maintained.



◆ On procedure or airway **without** an RNP alerting requirement:

Verify position.

